A "Toxohormone" from Cancerous Ascitic Fluid—Preliminary Note

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Cancerous ascitic fluids with primary seat in stomach were condensed together, precipitated with alcohol and boiled with changes of 80% ethanol. The solutions given were also condensed and precipitated with alcohol, and after taking up in water, electrodialyzed. The deposit occurring here was fractionally precipitated from water with alcohol and with ammonium sulfate in turn, separating the fraction precipitating by alcohol of 30-40% and at the \((\text{NH}_4)_2\text{SO}_4\) concentration range from 1.3 to 1.4 \(M\). The product, which was electrophoretically (a Tiselius apparatus) and ultracentrifugally (a Spinco ultracentrifuge Model-E) homogeneous (See Figs. 1 and 2), was remarkably biuret positive and slightly Molisch positive, and contained 13.5% N, 1.5% hexosamine and no ash. 5 mg. per caput of it, intraperitoneally injected, caused 40% decrease of liver catalase activity of mice, whereas it did not decrease the catalase activity of kidney and blood in vivo nor the liver catalase activity in vitro. It also induced more than 10% anemia, when intravenously injected into rabbits in a dose of 0.5 mg. per kg. body weight.

Fig. 1

Fig. 2

Fig. 1. Electrophoresis patterns of 1% solutions of the toxohormone (KIK factor) in veronal buffer pH 8.6, \(I=0.2\) (a) and glycine buffer pH 2.0, \(I=0.2\) (b); current 5 mA; temperature 10\(^{\circ}\)C. Exposure 120 min. after starting current.

Fig. 2. Sedimentation diagrams of 1% solutions of the toxohormone (KIK factor). (a) Veronal buffer above; 42 min. after reaching full speed 57,600 rev./min.; rotor temperature 8.6\(^{\circ}\)C. (b) Glycine buffer above; 44 min. after reaching full speed 59,500 rev./min.; rotor temperature 11.2\(^{\circ}\)C.